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3 ITERATIVE DECISION FEEDBACK ADAPTIVE EQUALIZER

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5 ABSTRACT OF THE DISCLOSURE

6 The present invention provides a receiver for underwater
7 acoustic telemetry which combines a decision feedback adaptive
8 equalizer structure with a modified turbo-equalizer structure.
9 The modified turbo-equalizer structure is of significantly
10 reduced complexity because the decision feedback adaptive
11 equalizer structure is operable to process a plurality of data
12 channels to provide a single symbol data output stream for
13 application to the input of the modified turbo-equalizer which
14 uses a decision feedback equalized, interleaver, deinterleaver
15 and a decoder. Either a hard viterbi decoder for single
16 iteration processing or a soft in/soft out decoder such as a MAP
17 decoder for multiple iteration can be used. The iteration
18 provide improved performance compared to a normal DFE and lower
19 complexity compared to the traditional turbo-equalizer.